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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,601	12/17/2001	Nobuyuki Takahashi	001425-120	4754

7590 09/24/2004

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EXAMINER	
FOX, CHARLES A	
ART UNIT	**PAPER NUMBER**
3652	

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/015,601	TAKAHASHI, NOBUYUKI	
	Examiner	Art Unit	
	Charles A. Fox	3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aruga et al. in view of Lorenz. In regards to claims 1-3 Aruga et al. US 6,027,618 teaches an in-line process system comprising:

a plurality of vacuum process chambers (2) which are longitudinally provided and hermetically connected to each other by gate valves (21);

a substrate carry system passing through said chamber comprising:

an outward carry line that extends from a first position to an inversion position within said device;

a return carry line which runs from said inversion device to a second position. Aruga et al. do not teach placing more than one outward or return carry line in their device. Lorenz US 6,336,546 teaches a process system with carry lines for substrates wherein there are provided branched carry lines with two outward lines and two return line that are all parallel.

It would have been obvious to one of ordinary skill in the art, at the time of invention to provide the system taught by Aruga et al. with multiple conveying paths as

taught by Lorenz in order to maximize the output of the process facility by always having a substrate available for processing on one of the carry lines.

In regards to claims 6-8 Aruga et al. further teach that said carry line further comprises:

a substrate carrier (3) that carries two substrates at substantially an angle of 90° to the horizontal;

a horizontal movement mechanism that moves said carrier along a transfer path (30) through a plurality of vacuum chambers (2) that are located on the perimeter of said device.

In regards to claim 9 Aruga et al. further teach that said horizontal movement mechanism moves the substrate carriers (3) in a first horizontal direction longitudinal to said system and also in a horizontal direction perpendicular to said first horizontal direction, such that the substrate always faces to the side in relation to the direction of travel.

Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. in view of Lorenz. In regards to claim 11 Takahashi et al. US 4,643,629 teaches a system for processing substrates comprising:

a load lock chamber (3) for loading and unloading wafer to and from the system;

a plurality of vacuum process chambers (5,6) longitudinally provided and hermetically connected to each other;

an intermediate chamber (4) arranged between the load lock and the process chambers;

a substrate carry system which passes through all of said chambers comprising:

an outwards carry line extending from a first position to an inversion position;

a return carry line extending from said inversion position to a second position. Takahashi et al. do not teach the system as having a branch line with a plurality of outward or return carry lines. Lorenz teaches a process system with carry lines for substrates wherein there are provided branched carry lines with two outward lines and two return line that are all parallel.

It would have been obvious to one of ordinary skill in the art, at the time of invention to provide the system taught by Takahashi et al. with multiple conveying paths as taught by Lorenz in order to maximize the output of the process facility by always having a substrate available for processing on one of the carry lines.

In regards to claims 12 and 13 Takahashi et al. also teach the outward and return lines are parallel and pass through a common vacuum chamber.

In regards to claim 14 Takahashi et al. further teach a cooling station (9) placed on the travel path of a substrate being processed.

In regards to claim 15 Takahashi et al. further teach an inversion chamber (6) at the end of the device opposite the load lock chamber (3) and that substrates are moved from the outward carry line to the return carry line by an inversion device.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aruga et al in view of Lorenz as applied to claim 1 above, and further in view of Takahashi et al. Aruga et al in view of Lorenz teach the limitations of claim 1 as above,

Aruga et al. further teach heating the substrates as they move along the carry lines, they do not teach the carry lines as being in the same vacuum chamber. Takahashi et al. teaches a process device with an outward and a return carry line that pass through a plurality of common vacuum chambers. It would have been obvious to one of ordinary skill in the art, at the time of invention to provide the device taught by Aruga et al in view of Lorenz with carry lines as taught by Takahashi et al. in order to decrease the footprint of the device leading to a greater density of process equipment in the clean area.

Response to Arguments

Applicant's arguments filed June 23, 2004 have been fully considered but they are not persuasive. In response to applicant's argument that Lorenz '546 is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the problem applicant is dealing with is providing a plurality of transfer lines for a substrate. The base references of Aruga et al. '618 and Takahashi et al. 629 both deal with conveying lines for substrates within a seal system. The Lorenz reference deals with conveying lines for substrates. As all references in question deal with conveying lines for substrates they are deemed to be analogous art.

In response that the compartments of the Aruga et al. reference are not longitudinally connected it is noted that each of the process modules in the reference

are connected to an adjacent module along the longitudinal axis of each module. Therefore the process modules are longitudinally provided as called for in the claim.

As for the complexity of modifying the base references of Aruga et al. '618 and Takahashi et al. 629 with the Lorenz reference this is a moot point. The examiner is not advocating replacing the transfer systems taught by the base references with that taught by Lorenz. Rather the examiner is using the teaching of a plurality of transfer lines taught by Lorenz would be recognized by one of ordinary skill in the art as a means to improve the base references. The rejections are held to be valid and are herein made final.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles A. Fox whose telephone number is 703-605-4294. The examiner can normally be reached between 7:00-5:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached at 703-308-3248. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CAF
CAF
9-15-04

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